Arizona Border Surveillance Technology Plan

(Advised by the SBI*net* Analysis of Alternatives)

July 22, 2010

U.S. Customs and Border Protection

ATTACHMENT 2

Executive Summary

- **First phase of SBI*net* Analysis of Alternatives (AoA) focused on Arizona: complete**

- **Border Patrol has augmented AoA with operational assessment of technology needs**

- **Result: baseline plan for technology deployment across Arizona**

- **Go-forward plans will build on results-to-date**
  - **Develop the baseline**
  - **Extend analysis beyond Arizona**
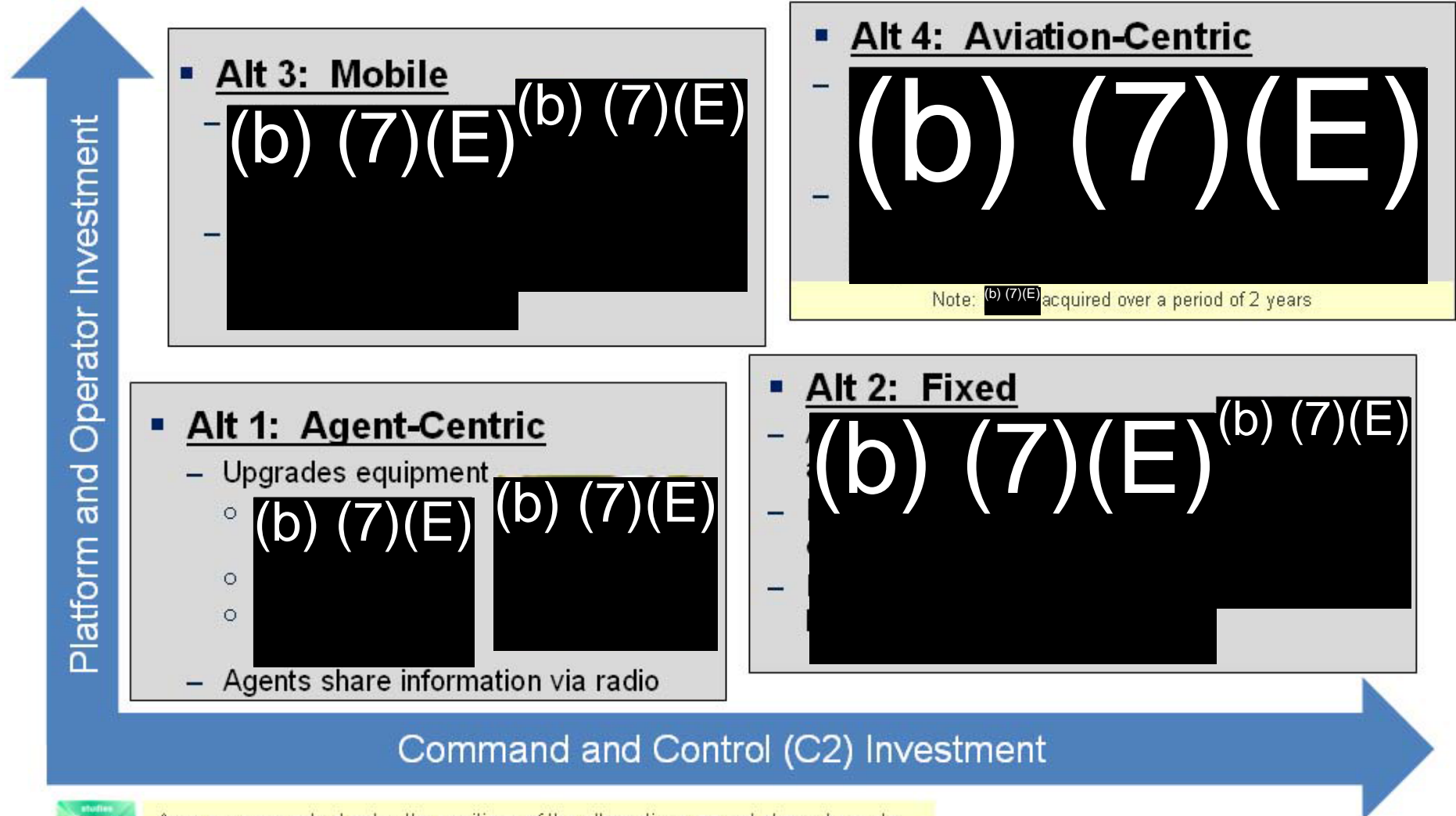
SBI*net* Analysis of Alternatives (AoA)

- Part of broader, Secretarial-directed assessment of SBI*net*
- Provides a "quantitative, science-based" assessment of _types_ of technology approaches
- Enables rigorous comparisons of technologies and analysis of operational judgments
- Considers both effectiveness and cost
- Does not dictate a solution, but can provide a test of reasonableness or an input to broader analysis
- First Phase focused on Arizona—completed
  - Reviewed in detail with many DHS offices

AoA Alternatives

- **Basic requirement: Awareness of border activity through surveillance and detection to facilitate apprehension**
- **Four basic technology approaches**
  - **Agent-centric**
  - **Mobile, decentralized systems**
  - **Fixed systems with centralized control centers**
  - **Aviation centric**

Four Alternatives

Platform and Operator Investment (vertical axis)

Alt 3: Mobile
- (b) (7)(E) (b) (7)(E)
-

Alt 4: Aviation-Centric
-
(b) (7)(E)
-

Note: (b) (7)(E) acquired over a period of 2 years

Alt 1: Agent-Centric
- Upgrades equipment
  - (b) (7)(E) (b) (7)(E)
  -
  -
- Agents share information via radio

Alt 2: Fixed
-
(b) (7)(E) (b) (7)(E)
-
-
-

Command and Control (C2) Investment (horizontal axis)

Axes are conceptual only: the positions of the alternatives are not shown to scale.

An Operating Unit of Analytic Services Inc.

Note on UAS

- AoA evaluated whether UAS could *also* substitute for fixed, ground-based systems

(b) (7)(E)

- AoA did *not* evaluate whether or not we need UAS capabilities

- Major differences:

(b) (7)(E)

- UAS supports other DHS missions but can and will be used to enhance the border surveillance mission

General AoA Conclusions

- There is no "one-size-fits-all" solution
- "Best" solution depends on specifics of a given area

(b) (7)(E)

  - Trade between cost and overall capability
- Mixing and matching technologies can increase overall cost effectiveness in any given area

Operational Assessment

Goal

- Identify appropriate mix of technologies to gain situational awareness to manage the Arizona border area

Process

- Convened a panel of operational SMEs from Arizona
- SMEs briefed on the science based AoA methodology and results
- Initially deferred to lower cost technology to meet the situational awareness requirement in each focus area
- Recommendations informed by existing IAA, ORBBP, Arizona surge documents, and the AoA
- Team doubled back to ensure proposed technology laydowns were reasonable based on the AoA

Result

- Proposed technology deployment in Arizona

(b) (7)(E), (b) (5)

Example: (b) (7)(E) within Focus Area 1

- (b) (7)(E)

  - (b) (7)(E)

  -

  -

- **AoA result:**

  - Effectiveness of (b) (7)(E)

- **Operational assessment:**

  - (b) (7)(E) are most cost-effective

(b) (7)(E) **AoA Summary**

(b) (7)(E)

Focus Area 1

(b) (7)(E)

(b) (7)(E)

- **Focus Area Characteristics**
  - (b) (7)(E)

- **Additional Technology Requirements (ROM* initial investment)**

(b) (7)(E)

- **Air Support**

(b) (7)(E)

(b) (7)(E)

*ROM: Rough Order of Magnitude

Cost Estimates

- **Focus Area 1**
  - Initial Investment : $211 M
  - Annual O&M Cost: $19 M

- **Focus Area 2**
  - Initial Investment : $163 M
  - Annual O&M Cost: $15 M

- **Focus Area 3**
  - Initial Investment : $198 M
  - Annual O&M Cost: $25 M

- **Yuma Sector**
  - Initial Investment : $181 M
  - Annual O&M Cost: $12 M

- **Cost Assumptions**
  - Rough-Order-of-Magnitude (ROM) costs for technology investment and Operations and Maintenance (O&M)
  - Costs do not include air support
  - Costs do not include an embedded operational support cost for shared IT software and equipment of $14.6 M annually

2/13/2011

Implications for SBI*net*

(b) (5)

Go-Forward Plan

(b) (5)

(b) (5)

(b) (5)

Key Schedule Events

- **Complete AoA Phase 1A (Arizona)** **Done**
- (b) (5)

* **Not including** [(b) (7)(E)] **, due to environmental issues**
** **Dependent on GAO resolution of contractor protest**

Recommendations

-
-
-
-
-

(b) (5)

2/13/2011

Backup

Background

- **CBP currently deploys a variety of technologies along the Southwest Border**

- **SBI*net* was planned to become the major, all-encompassing technology solution for the border**

- **The wisdom of this original SBI*net* concept is questionable**

- **Urgency of border security issues requires a timely and rational plan for technology deployment—now—to maintain persistent monitoring and surveillance**

(b) (7)(E)

The Contribution of Technology

- **Provides information about activity**
  - **Monitoring and surveillance**
- **Enhances ability to respond**
  - **Information about nature of incursions**
  - **Agent safety**
  - **Options (how, when, where)**
- **Contributes as one of three elements**
  - **Personnel, tactical infrastructure, technology**
- **Supports efforts both to _gain_ and _maintain_ border security**

Technology for Arizona

- **Compared technology alternatives against operational needs in Arizona**
  - **Advised, but not dictated, by SBI*net* Analysis of Alternatives (AoA) Phase 1A**
- **Developed comprehensive technology proposal with emphasis on focus areas**
- **"Doubled back" to ensure proposal was reasonable based on AoA**

Focus Area 2

(b) (7)(E)

- **Focus Area Characteristics**
  - (b) (7)(E)
  -

(b) (7)(E)

- **Additional Technology Requirements**

(b) (7)(E)

- **Air Support**
  -
  - (b) (7)(E)
  -

2/13/2011

Focus Area 3

(b) (7)(E)

- **Focus Area Characteristics**
  - (b) (7)(E)
  -
  -

(b) (7)(E)

- **Additional Technology Requirements**

(b) (7)(E)

- **Air Support**
  -
  -
  -

(b) (7)(E)

2/13/2011

(b) (7)(E) **Station**

(b) (7)(E)

- **Focus Area Characteristics**
  - (b) (7)(E)
  -
  -

(b) (7)(E)

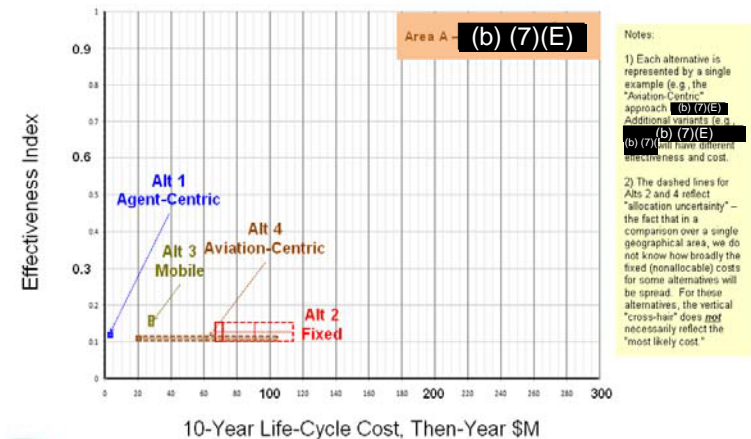- **Additional Technology Requirements**
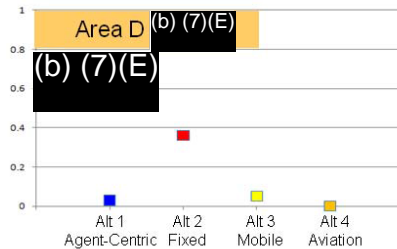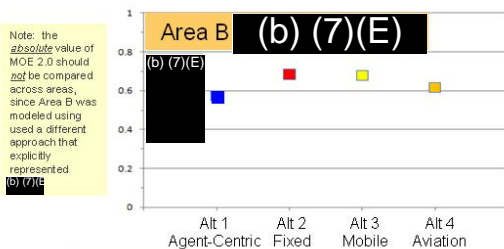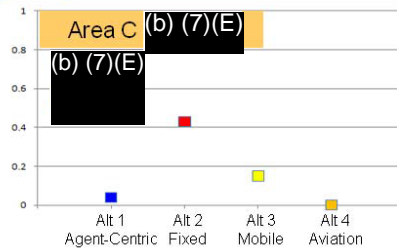
(b) (7)(E)

- **Air Support**
  -
  -
  -

(b) (7)(E)

2/13/2011

BW FOIA CBP 000925

AoA Results Depend on Area

Evaluation: MOE 2.0
Results for All Analysis Areas A-D

Area A (b) (7)(E)
(b) (7)(E)

Area C (b) (7)(E)
(b) (7)(E)

Note: the *absolute* value of MOE 2.0 should *not* be compared across areas, since Area B was modeled using a different approach that explicitly represented (b) (7)(E)

Area B (b) (7)(E)
(b) (7)(E)
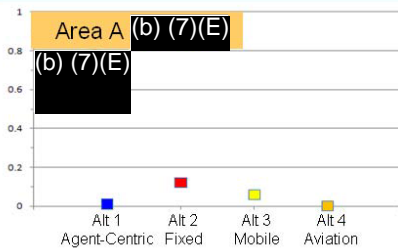
Area D (b) (7)(E)
(b) (7)(E)

MOE 2.0: Enable Timely and Effective Response

An Operating Unit of Analytic Services Inc.

For Official Use Only   39

Cost-Effectiveness Comparison
Analysis Area A – (b) (7)(E)

Area A – (b) (7)(E)

Notes:
1) Each alternative is represented by a single example (e.g., the "Aviation-Centric" approach (b) (7)(E) Additional variants (e.g. (b) (7)(E) will have different effectiveness and cost.

2) The dashed lines for Alts 2 and 4 reflect "allocation uncertainty" – the fact that in a comparison over a single geographical area, we do not know how broadly the fixed (nonallocable) costs for some alternatives will be spread. For these alternatives, the vertical "cross-hair" does *not* necessarily reflect the "most likely cost."
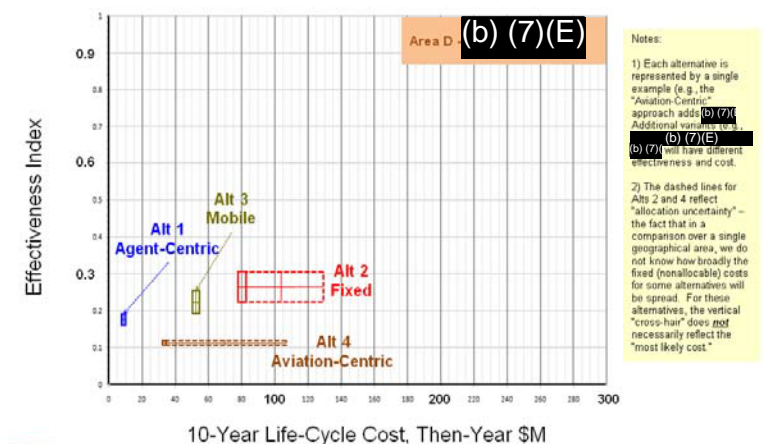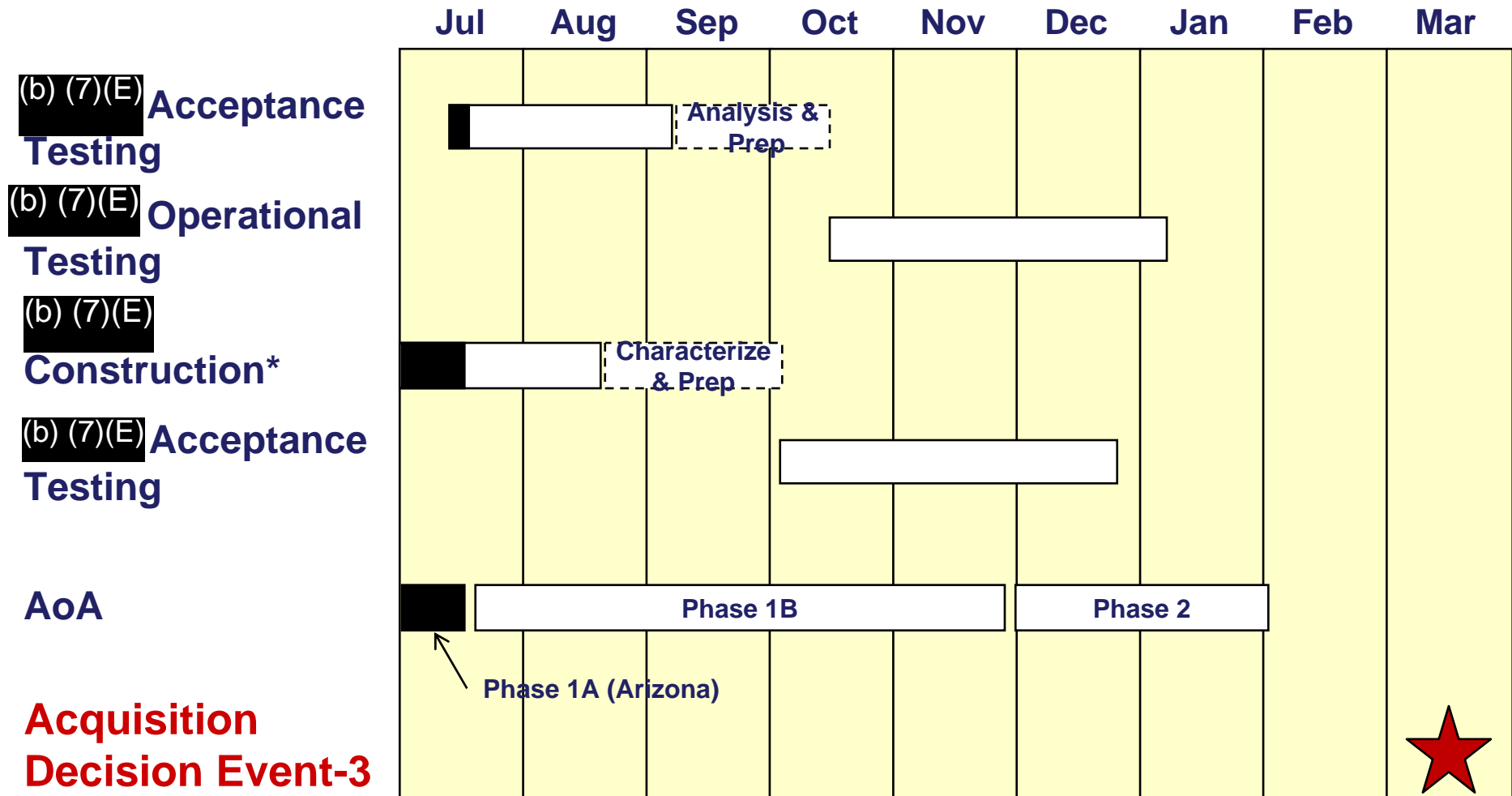
10-Year Life-Cycle Cost, Then-Year $M

Cost-Effectiveness Comparison
Analysis Area D - (b) (7)(E)

Area D - (b) (7)(E)

Notes:
1) Each alternative is represented by a single example (e.g., the "Aviation-Centric" approach adds (b) (7)(E) Additional variants (e.g. (b) (7)(E) will have different effectiveness and cost.

2) The dashed lines for Alts 2 and 4 reflect "allocation uncertainty" – the fact that in a comparison over a single geographical area, we do not know how broadly the fixed (nonallocable) costs for some alternatives will be spread. For these alternatives, the vertical "cross-hair" does *not* necessarily reflect the "most likely cost."

10-Year Life-Cycle Cost, Then-Year $M

An Operating Unit of Analytic Services Inc.   For Official Use Only   63

27

SBI*net* Near-Term Schedule

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar

(b) (7)(E) **Acceptance Testing**

Analysis & Prep

(b) (7)(E) **Operational Testing**

(b) (7)(E) **Construction***

Characterize & Prep

(b) (7)(E) **Acceptance Testing**

AoA

Phase 1B

Phase 2

Phase 1A (Arizona)

Acquisition Decision Event-3

⭐

* Not including (b) (7)(E) —environmental issues

AoA Schedule and Status

May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan

Field visit ✦
Interim brief ✦
Final brief ✦

Phase IA

Phase IB

Phase II
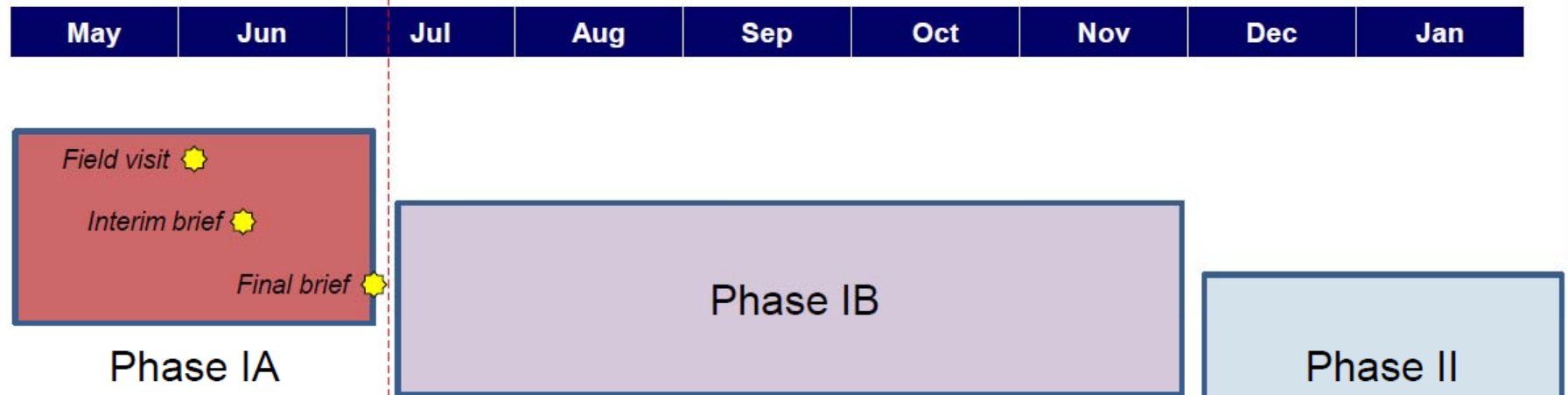
Focus on
- Near-term technologies
- Arizona border
- SBInet program decisions

(b) (7)(E)

0 mi   500 mi   1000 mi   1500 mi

studies HSI analysis
An Operating Unit of Analytic Services Inc.